

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 44 and 47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. Claims 44 and 47 do not appear to have support in the originally filed specification.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-11 and 43-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. The term "long-term" in claims 1 and 43 is a relative term which renders the claim indefinite. The term "long-term" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear what timeframe is considered "long-term".

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7. The term "extended" period in claims 1 and 43 is a relative term which renders the claim indefinite. The term "extended" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear what timeframe is considered an "extended" period.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1-4, 6-10, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caselli et al. (EP 1146111) in view of Stevens (U.S. Patent No. 5,712,237) and Caunt et al. (EP 0965541).

11. Regarding claims 1 and 14, Caselli et al. teaches a composition for disinfection of a space (See Abstract) comprising one or more essential oils or essential oil components (paragraph

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[0033]), and a mixture of volatile and non-volatile solvents (paragraphs [0023], [0110], and [0124]) absorbed on a carrier (paragraph [0139]).

12. Caselli et al. fails to teach the claimed weight ratio of volatile to non-volatile solvent.

13. However, Stevens teaches a composition (See Title) comprising a mixture of volatile and non-volatile solvents, wherein the claimed weight ratio of volatile to non-volatile solvent is in the range of 50:3 to 1:15 (col. 6, lines 30-35, col. 10, lines 50-52), which encompasses the claimed range of 3:1 to 1:3.

14. It would have been obvious to one of ordinary skill in the art at the time of the invention to choose a percent weight ratio, including those claimed, for the volatile to non-volatile solvents of Caselli et al. to control the distillation, compatibility, likelihood of forming azeotropes with other cosolvents, solubility with hydrophilic stains and contaminants, and cost (Stevens, col. 6, lines 24-30, col. 10, lines 56-67).

15. Caselli et al. fails to teach the claimed carrier material.

16. However, Caunt et al. teaches an antimicrobial a composition with a carrier of amorphous silicon dioxide (paragraphs [0001] and [0009]).

17. It would have been obvious to one of ordinary skill in the art at the time of the invention to choose the carrier of Caselli et al. to be amorphous silicon dioxide for anti-microbial properties (Caunt et al., paragraph [0009]).

18. Regarding the limitation that the composition is “vapor-producing”, for long-term disinfection of a space via the vapor phase, and permits “release of the vapor over an extended period” as presently claimed, applicants attention is drawn to MPEP 2111.02 which states that “if the body of a claim fully and intrinsically sets forth all the limitations of the claimed invention,

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and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction". Further, MPEP 2111.02 states that statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the purpose or intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

19. It is the examiner's position that the preamble does not state any distinct definition of any of the claimed invention's limitations and further that the purpose or intended use, i.e. "vapor-producing", for long-term disinfection of a space via the vapor phase, and permits "release of the vapor over an extended period", recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art composition and further that the prior art structure which is a composition identical to that set forth in the present claims is capable of performing the recited purpose or intended use.

20. Regarding claims 2, 3, and 6, Caselli et al. teaches wherein the essential oil component is cinnamic aldehyde, cinnamic alcohol, and/or cinnamon oil (paragraph [0036]).

21. Regarding claim 4, Caselli et al. teaches wherein the essential oil component is eugenol (paragraph [0047]).

22. Regarding claims 7 and 8, Caselli et al. teaches wherein the volatile solvent is an alcohol and wherein the alcohol is isopropanol (paragraph [0124]).

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23. Regarding claim 9, Caselli et al. teaches wherein the non-volatile solvent is water (paragraph [0023]).

24. Regarding claim 10, Caselli et al. teaches wherein the non-volatile solvent is glycol (paragraph [0111]).

25. Regarding claim 47, the claimed limitation is a recitation of intended use. Analogous reasoning applies as disclosed in paragraphs above.

26. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caselli et al. (EP 1146111) in view of Stevens (U.S. Patent No. 5,712,237) and Caunt et al. (EP 0965541), and further, in view of Julemont et al. (U.S. Patent No. 6,380,152)

27. Caselli et al. as modified by Stevens and Caunt et al. is relied upon as disclosed above.

28. Caselli et al. as modified by Stevens and Caunt et al. fails to disclose wherein the essential oil component is tea tree oil.

29. However, Julemont et al. teaches a composition (col. 1, lines 56) comprising one or more essential oils (col. 2, line 48-col. 3, line 30) wherein the essential oil is tea tree oil (col. 3, line 3) and wherein the composition is absorbed on a carrier (col. 1, lines 48-51).

30. Given that Julemont et al. teaches essential oils including those of anise, clove, aniseed, lemongrass, lemon, lavender, and tea tree oil (col. 2, line 48-col. 3, line 30) and given that Caselli et al. teaches essential oils including those of anise, clove, aniseed, lemongrass, lemon, and lavender that act as proteins denaturing agents to exhibit antimicrobial activity and contribute to the safety profile when used to disinfect any surface, and impart pleasant odor to a

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composition without the need of adding a perfume, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute one of the essential oils in the composition of Caselli et al. as a known functional equivalent of tea tree oil. Substitution of known components with other components that yield predictable results would have been obvious to one of ordinary skill in the art since predictable characteristics such as antimicrobial activity that may be used to disinfect surfaces. See MPEP 2144.06 II.

31. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caselli et al. (EP 1146111) in view of Stevens (U.S. Patent No. 5,712,237) and Caunt et al. (EP 0965541), and further, in view of McCue et al. (U.S. Patent No. 5,403,587).

32. Caselli et al. as modified by Stevens and Caunt et al. is relied upon as disclosed above.

33. Caselli et al. as modified by Stevens and Caunt et al. fails to teach wherein the non-volatile solvent is a glycol wherein the glycol is (mono)propylene glycol.

34. However, McCue et al. teaches wherein the non-volatile solvent is a glycol wherein the glycol is (mono)propylene glycol (col. 4, lines 15-16).

35. It would have been obvious to one of ordinary skill in the art at the time of the invention to include (mono)propylene glycol as the glycol of Caselli et al. as a solubilizing and dispersing agent (McCue et al., col. 4, lines 4-11).

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36. Claims 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caselli et al. (EP 1146111) in view of Stevens (U.S. Patent No. 5,712,237) and Scheuing et al. (U.S. Patent Application Publication No. 2003/0220223).

37. Regarding claim 43, Caselli et al. teaches a composition for disinfection of a space (See Abstract) comprising one or more essential oils or essential oil components (paragraph [0033]), and a mixture of volatile and non-volatile solvents (paragraphs [0023], [0110], and [0124]) absorbed on a carrier (paragraph [0139]), wherein the volatile solvent is methanol, ethanol, isopropanol, or 1-propanol (paragraph [0124]).

38. Caselli et al. fails to teach the claimed percent weight ratio of volatile to non-volatile solvent.

39. However, Stevens teaches a composition (See Title) comprising a mixture of volatile and non-volatile solvents, wherein the claimed percent weight ratio of volatile to non-volatile solvent is in the range of 50:3 to 1:15 (col. 6, lines 30-35, col. 10, lines 50-52), which encompasses the claimed range of 3:1 to 1:3.

40. It would have been obvious to one of ordinary skill in the art at the time of the invention to choose a percent weight ratio, including those claimed, for the volatile to non-volatile solvents of Caselli et al. to control the distillation, compatibility, likelihood of forming azeotropes with other cosolvents, solubility with hydrophilic stains and contaminants, and cost (Stevens, col. 6, lines 24-30, col. 10, lines 56-67).

41. Caselli et al. fails to teach the claimed carrier material.

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42. However, Scheuing et al. teaches a composition for disinfecting a space (paragraph [0042]) wherein carrier is a non-woven material and the non-woven carrier is a combination of cellulose and polypropylene (paragraph [0072]).

43. It would have been obvious to one of ordinary skill in the art at the time of the invention to choose a non-woven cellulose and polypropylene combination for the carrier of Caselli et al. as modified by Stevens as an effective absorbent material (Scheuing et al. paragraphs [0070]-[0074]).

44. Regarding the limitation that the composition is “vapor-producing”, for long-term disinfection of a space via the vapor phase, and permitting release of the vapor over an extended period as presently claimed, applicants attention is drawn to MPEP 2111.02 which states that “if the body of a claim fully and intrinsically sets forth all the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention’s limitations, then the preamble is not considered a limitation and is of no significance to claim construction”. Further, MPEP 2111.02 states that statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the purpose or intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

45. It is the examiner’s position that the preamble does not state any distinct definition of any of the claimed invention’s limitations and further that the purpose or intended use, i.e. “vapor-producing”, for long-term disinfection of a space via the vapor phase, and permitting release of



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the vapor over an extended period, recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art composition and further that the prior art structure which is a composition identical to that set forth in the present claims is capable of performing the recited purpose or intended use.

46. Regarding claim 44, the claimed limitation is a recitation of intended use. Analogous reasoning applies as disclosed in the previous paragraph.

47. Regarding claim 45, while Caselli et al. as modified by Stevens and Scheuing et al. does not disclose the size limitation as claimed, it is noted that limitations relating to size are not sufficient to patentably distinguish the present invention over the prior art. Furthermore, given that the structural laminate of Caselli et al. as modified by Stevens and Scheuing et al. would not perform differently than that claimed, the claimed structural laminate is not patentably distinctly from that of Caselli et al. as modified by Stevens and Scheuing et al., given that the courts have held that where the only difference between the prior art and the claims is a recitation of relative dimensions, there is no patentable distinction between the claims and the prior art (see MPEP 2144.04 IVA). Finally, it is noted one of ordinary skill would easily recognize the composite of the prior art could be sized to fulfill a desired end use.

48. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caselli et al. (EP 1146111) in view of Stevens (U.S. Patent No. 5,712,237) and Scheuing et al. (U.S. Patent Application Publication No. 2003/0220223), and further, in view of Hartman et al. (U.S. Patent Application Publication No. 2005/0106121).

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49. Caselli et al. as modified by Stevens and Scheuing et al. is relied upon as disclosed above.

50. Caselli et al. as modified by Stevens and Scheuing et al. fails to teach wherein the carrier is a self-adhesive item or label.

51. However, Hartman et al. teaches a composition for disinfecting a space (paragraph [0016]) wherein the carrier is a self-adhesive item or label (paragraphs [0063] and [0065]).

52. It would have been obvious to one of ordinary skill in the art at the time of the invention to choose a self-adhesive item or label for the carrier of Caselli et al. as modified by Stevens and Scheuing et al. for generating desirable amounts of chlorine dioxide gas over a desirable period of time when exposed to water or water vapor to prevent or retard microbial growth within an atmosphere or within an enclosure for a sustained period of time and, therefore, be utilized to control microbial growth on items contained in a package (paragraphs [0016] and [0075]).

### ***Response to Arguments***

53. Applicants' arguments filed 9 November 2011 have been fully considered but they are not persuasive.

54. Applicants amended independent claims 1 and 43, cancelled claims 14 and 17-19, and added new claims 44-47.

55. Applicants argue that one would not use the solvent ratios of a dry cleaning composition of Stevens and modify "a completely different composition" of Caselli and further, the motivation of Stevens regarding azeotropes is not relevant to Caselli.

56. Regardless of the end use of the solvent mixture disclosed by Stevens, it is significant to note that Stevens does provide motivation for using specific ratios of volatile solvent to non-volatile solvent. While it is agreed that Stevens is drawn to dry cleaning composition, applicants' are reminded that according to MPEP 2141.01 (a), a reference may be relied on as a basis for rejection of an applicants' invention if it is "reasonably pertinent to the particular problem with which the inventor is concerned." A reasonably pertinent reference is further described as one which "even though it maybe in a different field of endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." Stevens is, therefore, a reasonably pertinent reference, because it teaches claimed ratio of volatile to non-volatile solvents to control the distillation, compatibility, likelihood of forming azeotropes with other cosolvents, solubility with hydrophilic stains and contaminants, and cost, which is a function especially pertinent to the invention at hand. Further, with respect to azeotropes, it is noted that this was only one motivation provided by Stevens. The other motivation included solubility with contaminants and control of cost, which would be relevant to Caselli et al.

57. Applicants argue that the claimed solvent ratio is critical for long-term disinfection of a space and points to Applicants' Examples, namely Example 4, Table 4.

58. However, the data is not persuasive given that it does not compare with the closest prior art of Stevens. While the data shows that the inventive composition has unexpected and

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surprising results over the composition of Caunt et al. Caunt et al. was not used to teach the solvent amount but rather used to teach carrier comprising amorphous silicon dioxide. Further, the data is not persuasive given that the data is not in scope with the scope of the present claims given that there is no data at the lower end of the ratio and that there is only data for one specific volatile and non-volatile solvent while claim 1 broadly encompass all volatile and non-volatile solvents. Further, the results appear to correspond to time, i.e. all ratios produce good results at 0 weeks and ratio of 5:1 produces good results at 2 weeks. However, there is no limitation in the claims requiring time. Furthermore, in the data there is no carrier used which is required in all the present claims.

59. Applicants argue that “the solvent ratio of the current invention is critical for providing vapor-phase disinfecting effects of a space over a prolonged period of time, whereas the Stevens dry-cleaning composition has nothing to do with disinfection.”

60. However, “obviousness under 103 is not negated because the motivation to arrive at the claimed invention as disclosed by the prior art does not agree with appellant’s motivation”, *In re Dillon*, 16 USPQ2d 1897 (Fed. Cir. 1990), *In re Tomlinson*, 150 USPQ 623 (CCPA 1966).

61. Applicants argue that “the current invention is for use under room temperature, whereas the Stevens dry-cleaning composition is for use under elevated temperatures or pressures.”

62. However, motivation provided by Stevens is for types and amounts of solvents used, regardless of their final end use.

63. Applicants argue that “amorphous silicon dioxide is not suitable for contacting the Caselli et al. formulation with a hard surface”.

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64. However, it is noted that “the arguments of counsel cannot take the place of evidence in the record”, *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). It is the examiner’s position that the arguments provided by the applicant regarding the amorphous silicon dioxide being unsuitable for contacting the Caselli formulation with a hard surface reference must be supported by a declaration or affidavit. As set forth in MPEP 716.02(g), “the reason for requiring evidence in a declaration or affidavit form is to obtain the assurances that any statements or representations made are correct, as provided by 35 U.S.C. 24 and 18 U.S.C. 1001”. Furthermore, amorphous silicon dioxide may be used in wipes such as those of Caselli’s on a hard surface as evidenced by Castro et al. (U.S. Patent Application Publication No. 2004/0147425) in paragraphs [0044], [0121], and [0172].

65. Applicants argue that there is no reason to replace the wipes of Caselli with a carrier of the present invention since in the present invention, the carrier is used to release composition in controlled manner for extended period of time.

66. However, “obviousness under 103 is not negated because the motivation to arrive at the claimed invention as disclosed by the prior art does not agree with appellant’s motivation”, *In re Dillon*, 16 USPQ2d 1897 (Fed. Cir. 1990), *In re Tomlinson*, 150 USPQ 623 (CCPA 1966). It is noted that motivation of Scheuing et al. for using nonwoven material is for effective absorbency which would be relevant to the wipes of Caselli.

67. Applicants argue that Scheuing et al. fails to teach composition for long-term disinfection of a space and the disinfecting agents of Scheuing et al. are non-volatile and would have no vapor action capability.

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68. However, note that while Scheuing et al. does not disclose all the features of the present claimed invention, Scheuing et al. is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely a disinfecting composition with use of non-woven cellulose and polypropylene carrier, and in combination with the primary reference, discloses the presently claimed invention.

### *Conclusion*

69. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

70. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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71. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHENG YUAN HUANG whose telephone number is (571) 270-7387. The examiner can normally be reached on Monday-Thursday from 10 AM to 6 PM.

72. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho, can be reached at 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

73. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. H./

Cheng Yuan Huang

Examiner, Art Unit 1787

December 2, 2011

/Callie E. Shosho/

Supervisory Patent Examiner, Art Unit 1787